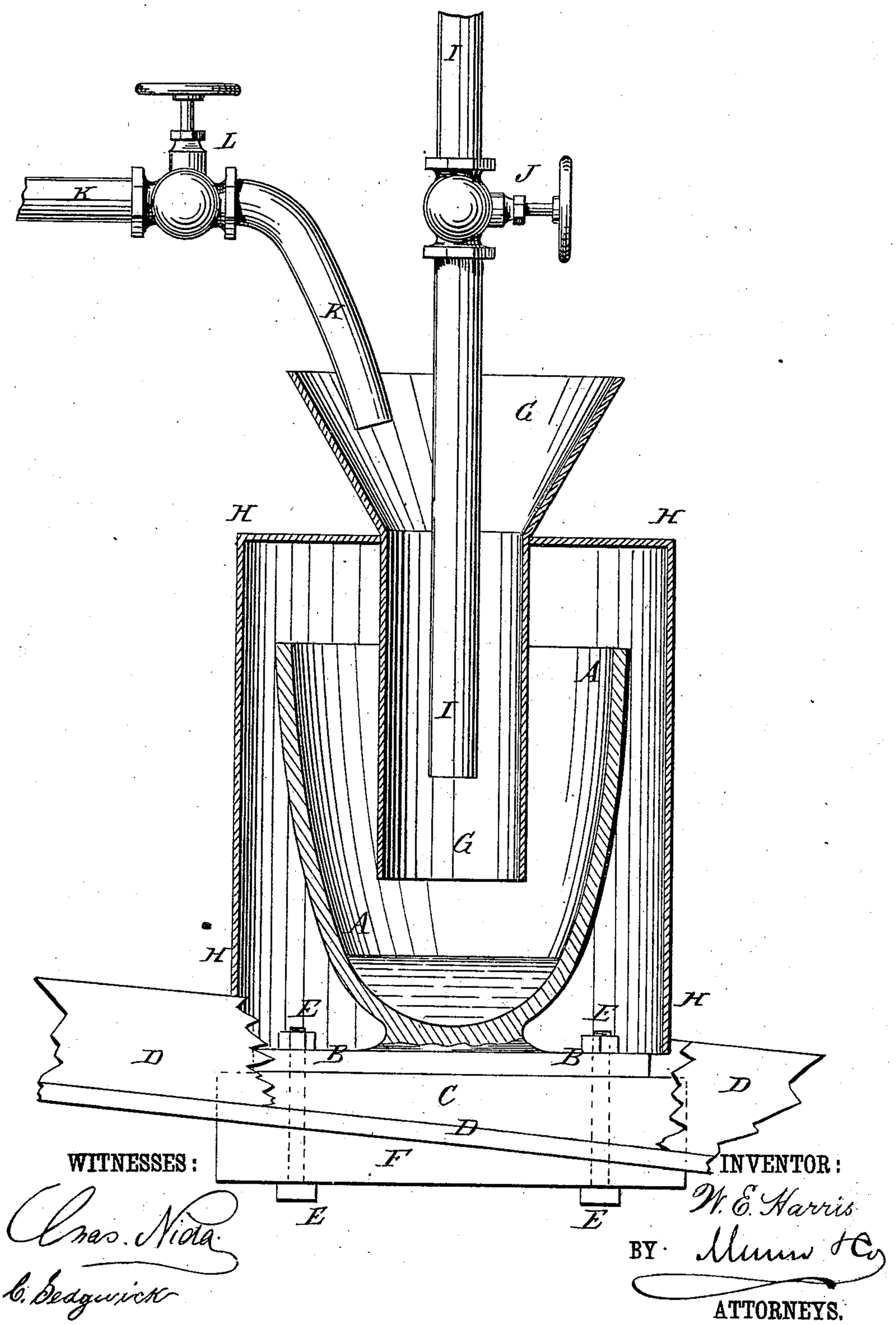
(No Model.)

W. E. HARRIS.

AMALGAMATOR.

No. 272,544. Patented Feb. 20, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM E. HARRIS, OF NEW YORK, N. Y.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 272,544, dated February 20, 1883.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EDWARD HARRIS, of the city, county, and State of New York, have invented a new and useful Improvement in Amalgamators, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawing, forming a part of this specification, and which is a sectional side elevation of my improvement.

The object of this invention is to facilitate the separation of fine gold from pulverized ore, and from black sands and other sands.

The invention is an improvement in the class of apparatus in which a stream of pulverized or granulated ore is projected into a bath of mercury and the waste or refuse material carried off by the overflow of water which is constantly admitted into the bath.

The improvement consists in the combination of parts, as hereinafter described and claimed.

The amalgamating-pot is secured in an erect position upon the bottom of an inclined sluice by bolts and tapered blocks, and is surrounded by a casing to confine the steam, as will be hereinafter fully described.

A represents the amalgamating-pot, which is made cup-shaped, and with a foot, B. The foot B rests upon the level upper side of a wedge-shaped block, C, the inclined side of which rests upon the inclined bottom of the sluice D. The foot B is secured to the block C and the bottom of the sluice D by bolts E, a tapered block or tapered washers F being placed upon the lower side of the bottom of the sluice D to give the heads and nuts of the bolts E a square bearing.

The powdered ore or fine sand is fed into the pot A through the funnel G, which passes through a hole in the top of the casing H and extends down into or a little below the middle part of the pot A. The funnel G is supported by the casing H or a suitable frame. The upper part of the casing H is made steam-tight, and its open lower end extends down to or nearly to the foot B, and is made larger than the said foot, so that the overflow of the pot A can escape freely into the sluice D. The casing H can be supported by bars attached to the sluice D, or by other suitable means.

I is a steam-pipe passing down through the center of the funnel G, and extending nearly to the lower end of the said funnel. The pipe I is provided with a valve, J, by means of which the discharge of steam is regulated and stopped, as may be required.

Water is introduced into the flaring upper part of the funnel G through a pipe, K, which is provided with a valve, L, so that the inflow of water can be regulated and stopped as may be required.

In using the amalgamator, the pot A is filled with quicksilver nearly to the lower end of the funnel G and steam at about forty-pounds pressure is turned on through the pipe I. The powdered ore or fine sand is then fed into the funnel G, in connection with water through the pipe K. With this arrangement the ore or sand is forced into the quicksilver by the steam and the refuse is carried over the top of the pot A by the overflowing water, and flows off through the sluice D.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with the inclined sluice D, the pot A, containing mercury, the ore-funnel G, and steam and water pipes I and K, of the steam-tight casing H, the foot B, and tapered block C F, all arranged, as shown and described, to operate as specified.

WILLIAM EDWARD HARRIS.

Witnesses:
JAMES T. GRAHAM,
EDGAR TATE.